



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:  
Scott Bysick et al.

Art Unit: 3727

Appl. No.: 10/658,797

Examiner: Sue A. Weaver

Confirmation No.: 1814

Atty. Docket No.: 29953-184845

Filed: September 10, 2003

For: DEFORMATION RESISTANT  
PANELS

Customer No.

26694

PATENT TRADEMARK OFFICE

**SECOND DECLARATION UNDER 37 C.F.R. § 1.131**

Honorable Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, the undersigned, being duly warned, declare the following:

1. I am an inventor of the subject matter described and claimed in the above-identified U.S. patent application.
2. I understand that this patent application has been rejected over U.S. Patent No. 6,932,230 to Pedmo et al., which has an effective date of August 15, 2003.
3. I conceived the invention described and claimed in this application, and reduced it to practice, prior to August 15, 2003, as demonstrated by the Invention Disclosure Form attached hereto as Exhibit A (with dates redacted).

4. As demonstrated by, *inter alia*, Figs. 1-6 of the attached Invention Disclosure Form, and the accompanying description in paragraph 11 of the Invention Disclosure Form, I conceived the invention of at least current independent claims 1, 13, and 20 prior to August 15, 2003.

5. As demonstrated by, *inter alia*, paragraph 8 of the Invention Disclosure Form, I successfully reduced to practice the invention of at least current independent claims 1, 13, and 20 prior to August 15, 2003.

6. The acts described above in paragraphs 3-5 were carried out in the United States of America.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

10/27/06  
Date

11-15-06  
Date

10-27-06  
Date

Scott E. Bysick  
Scott Bysick

Raymond Pritchett  
Raymond Pritchett

John Denner  
John Denner

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**From:** Web Delivery  
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Raymond.Pritchett@grahampackaging.com; John.Denner@grahampackaging.com  
**Subject:** Invention Disclosure Form - FB 02-028

### Invention Disclosure Form

Date:

**\*\* Confidential and Proprietary When Filled In \*\*** Prepared and submitted at the request and direction of an attorney

1. Invention Disclosure Form No. FB 02-028  
(for Patent Committee use only)

2. Requestor:  
Scott.Bysick@grahampackaging.com

3. Descriptive Title:  
Deformation Resistant Panels

4. Inventor(s) (Name, Telephone, Location, Individual Contribution):  
Scott Bysick 717-849-8637 York, PA  
Designer of panel and islands  
Raymond Pritchett 717-849-8571 York, PA  
Designer of panel and islands  
John Denner 717-849-8625 York, PA  
ideation of design

5. Material:  
PET

6. Invention Type:  
Package

7. Conception of Invention:  
A. When did you first think of this idea?  
When attempting to solve barreling issues of bottle during fill process.  
B. Date of first written description.

C. Where is the description found?  
Notebook #0015 page 5 for the "PEANUT" shaped island

8. Prototype Construction:  
A. When was this prototype first built and tested?  
1st versions built for trial at Bradford plant on  
B. Was the prototype test successful?  
All 3 panel versions successfully reduced post bulging under pressure.

9. Use or Sale of Invention:

A. Has this or will this be incorporated into a product?

Yes

B. When?

Once design has been qualified on a large scale fill trial.

C. Name of product:

64oz Minute Maid Steamboat as well as our 64oz Stock packages

10. Disclosure of Invention to Others:

A. Was the invention disclosed to any person NOT a GPC employee? Yes

B. If a disclosure was made, when was it made?

After development bottles were filled at Minute Maid Co-packer

C. To whom was the disclosure made?

The Minute Maid Co. and its nor-cal and north hampton fillers.

D. Was the disclosure made under an obligation of confidentiality? Yes

11. Description of the Invention:

In the process of filling a plastic bottle with hot liquid(juice or similiar product), pressure or vacuum imposed on the container can result in its permanant deformation. The present invention corrects this problem.

Novel manipulation of the vacuum panel designs not only eliminate bulging or "barreling" when the package is subject to fill pressure at high temperature, but also greatly improves resistance to vacuum on cool down. Both of these performance benefits can allow light weighting of the container and broaden its overall design flexibility. The primary focus is on the configuration of the label panel. In a standard design, a simple concave or flat panel flexes inward to relieve vacuum. Such panels normally include a raised center island to help support the label. A cross section horizontally through this area (Fig. 1) reveals an almost spring like construction, which folds outward during fill pressure causing the bottle to barrel. Since the bottle (PET) is at a temperature above the Tg of the plastic, a set takes place and the bottle becomes permanently deformed.

The present invention corrects this problem by establishing a horizontal rib through the center of the raised panel island. This in conjunction with selected curvature of the panel itself creates a condition wherein fold out cannot take place. The selected panel curvature profile (Figs. 2,3,4) can either be flat at the bottom, convex in the middle and concave at the top, or flat at both the bottom and top, but convex in the middle. Standard panels are typically flat at the bottom and concave at the middle and top. The horizontal rib through the island can be imposed by configuring the island as a figure "8"(Fig. 5). Another version of the concept includes adding vertical inward ribs along the side of the panel (Fig. 6). This configuration adds more flexibility to the panel in cases where such flexibility might be advantageous, such as higher pressure situations (e.g. nitrogen flush, etc.). Additionally, this combination of raised panel island constructions and selected panel curvature results in more than a 50% increase in overall resistance to vacuum collapse. Containers constructed in this fashion can therefore be substantially light weighted and the design options for other portions the package can be broadened.

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INVENTOR

Date: \_\_\_\_\_

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